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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,053	01/18/2002	Santosh C. Lolayekar	E003 - 1008US0	1750

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EXAMINER	
REILLY, SEAN M	

ART UNIT	PAPER NUMBER
2153	

MAIL DATE	DELIVERY MODE
05/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/051,053	LOLAYEKAR ET AL.	
	Examiner	Art Unit	
	Sean Reilly	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/13/06*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to Applicant's request for reconsideration filed on June 13, 2006. Claims 1-6 and 8-26 are presented for further examination. This action is made NON-FINAL due to the new grounds of rejection. Applicant's arguments are with regard to Epps were persuasive. A new grounds of rejection is set forth below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-6 and 8-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (U.S. Patent Application Publication Number 2003/0237016 ; hereinafter Johnson) and Mercier et al. (U.S. Patent Application Publication Number 2003/0005119; hereinafter Mercier) and Ito et al. (U.S. Patent No. 5,721,904, hereinafter "Ito") and Applicant's Admitted Prior Art.**

With regard to claims 1, 2, 8, 15, 17-19 and 23, Johnson disclosed a method for use in a system for storing and accessing data ("SAN"), the system including at least one initiator ("source") and at least one target comprising a mirrored virtual target or a physical storage device (Figure 2, storage 205) and at least one switch (Figure 2, router 200), the initiator, target, and switch communicating using at least one network, the at least one switch including a plurality of ports (router 200 "ports" see inter alia ¶ 51) and a plurality of processing units (see at

least network processors ¶ 54), wherein each processing unit is associated (insomuch as the network processors process data to send out over the port) with at least one port of said plurality of ports to provide load balancing at said at least one port (¶ 118 and also ¶ 140 "redirect a switch request to a different switch port") , the method comprising:

Providing a plurality of request paths over the network to the target from switch, each path passing through at least one port of the switch (¶ 38, router 200 connected to storage 205 in one embodiment by a SAN ¶ 44);

Receiving at said at least one port, a plurality of storage input/output requests (I/O requests to the storage 205); and

For each request at said one or more ports (router 200 "ports" see inter alia ¶ 51), dynamically load balancing each request among the paths by using said one or more processing units (see at least network processors ¶ 54) associated with said one or more ports to determine an appropriate path by using the processing unit associated with said one or more ports to determine the appropriate path (¶ 118 and also ¶ 140 "redirect a switch request to a different switch port").

Johnson disclosed load balancing requests however Johnson failed to specifically recite loading balancing by selecting paths based on the shorted average response time for each path. Nonetheless, such a scheme was widely known in the art at the time of Applicant's invention, as evidenced by Mercier and Ito. In a similar storage networking system, Mercier disclosed that path performance information is pertinent for determining the best or most optimal data paths to service storage I/O requests (see inter alia Mercier ¶s 11, 22, 45-46). Furthermore Ito disclosed that the shortest average response time was a well-known performance metric to use at the time

of Applicant's invention when load balancing requests (see Ito, col. 18, lines 34-36). Thus, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify Johnson's system to load balance path selections based on performance metrics, such as the shortest average response time, in order to select the best or most optimal path for serving storage I/O requests in Johnson's system.

In considering claims 3, 20, and 24, Johnson further discloses that the target is a physical storage device (Figure 2, storage 205).

In considering claims 4, 21, and 25, Applicant's admitted prior art disclosed that SANs often utilize a virtualization process to spread the size of a virtual disk to multiple physical drives (Applicant's Specification pg 4, ¶ 10). Thus, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize such a virtualization scheme in the SAN of Johnson's system in order to increase the amount of disk space available to each user by allowing disk space to span multiple physical drives.

With regard to claims 5, 6, 9-11, 22, and 26, Mercier disclosed utilizing replicated targets in the system and thus these targets would be load balanced in a similar fashion (see inter alia ¶s 22 and 23).

With regard to claims 12-14, Johnson disclosed that multiple line cards are used to route requests and the same or different line cards clearly would be utilized as various requests are routed (e.g. a cluster of routers, ¶s 118 and 140).

With regard to claim 16, Johnson disclosed each processing unit includes a storage processing unit (e.g. anyone of the various processors contained in each router, see inter alia ¶ 54).

Conclusion

The prior art made of record, in PTO-892 form, and not relied upon is considered pertinent to applicant's disclosure.

This office action is made **NON-FINAL.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Reilly whose telephone number is 571-272-4228. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 10, 2007

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
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